



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/737,281	12/16/2003	Gaohong Wei	VRT0112US	6590
60429 7590 11/05/2008 CAMPBELL STEPHENSON LLP 11401 CENTURY OAKS TERRACE BLDG. H, SUITE 250 AUSTIN, TX 78758			EXAMINER PHAM, MICHAEL	
			ART UNIT 2167	PAPER NUMBER
			MAIL DATE 11/05/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/737,281	<b>Applicant(s)</b> WEI ET AL.	
	<b>Examiner</b> MICHAEL PHAM	<b>Art Unit</b> 2167	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 July 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**Detailed Action**

***Status of claims***

1. Claims 1-32 are pending.
2. Claims 1-32 have been examined.

***Specification***

3. Regarding claims 28-32 these claims recite a “computer-readable storage medium”. In the absence of any modifying disclosure of this limitation in the specification, the examiner interprets the terms 'computer-readable storage medium' as excluding printed paper, transmission media, signals, or any form of energy, such that the claim clearly falls within a statutory class of invention as required under the terms of 35 U.S.C. 101.

***Claim Rejections - 35 USC § 101***

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.
5. Claims 13-22 and 34 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.
  - a. Claims 13 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

MPEP 2106.01:

**The claims lack the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor are they a combination of chemical compounds to be a composition of matter. As such, they fail to fall within a statutory category. They are, at best, functional descriptive material *per se*.**

**Descriptive material can be characterized as either “functional descriptive material” or “nonfunctional descriptive material.” Both types of “descriptive material” are nonstatutory when claimed as descriptive material *per se*, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994)**

**Merely claiming nonfunctional descriptive material, i.e., abstract ideas, stored on a computer-readable medium, in a computer, or on an electromagnetic carrier signal, does not make it statutory. See *Diehr*, 450 U.S. at 185-86, 209 USPQ at 8 (noting that the claims for an algorithm in *Benson* were unpatentable as abstract ideas because “[t]he sole practical application of the algorithm was in connection with the programming of a general purpose computer.”).**

Claim 13 recites “an apparatus”. However claim 13 fails to contain any computer hardware that is used to implement the apparatus so as to realize the functionality. Contrary to arguments made by some applicants, use of the word “apparatus” does not inherently means that the claim is directed to a machine. Only if at least one of the claimed elements of the apparatus is a physical part of a device can the system as claimed constitute part of a device or a combination of devices to be a machine within the meaning of 101. Furthermore, Applicant’s specification paragraph 0049, states that each block diagram component, flowchart step, operation and/or component illustrated by use of examples can be implemented, individually and/or collectively, by a wide range of hardware, software, firmware, or any combination thereof. Thus the body of claim 13 is merely an abstract idea and is being processed without any computer manipulation. In regards, to “storage means for storing said database”,

Art Unit: 2167

specification 0038 states that a data management resource may include a logical or physical data storage element such as data volume, transmission media, or the like.

Claims 14-22 and 34 fail to resolve the deficiencies of claim 13 and are therefore rejected.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 7133884 by Murley et. al. (hereafter Murley) further in view of U.S. Patent Application Publication 20050021487 by Verma et. al. (hereafter Verma).

**Claim 1:**

Murley discloses the following claimed limitations:

“determining a speculative structure of said database,” [col. 7 lines 19-22, current snapshot. Accordingly, determining a speculative structure (current snapshot) of said database (target database) is disclosed. ]

“wherein said database comprises the plurality of components and said database is stored on a storage volume;” [col. 2 lines 52-53 discloses identifies one or more source database objects in a database. Col. 4 line 2 discloses targeted database objects as they exist on the storage device or system. Col. 1 lines 15-18 discloses a database is, fundamentally, a computerized record keeping system in which large amounts of information maybe stored in a structured manner for ease of subsequent retrieval and processing. Col. 1 lines 20-22, discloses a dbms, in turn provides four primary functions: management of physical storage. Accordingly, wherein said database (col. 2 lines 52-53, a database) comprises the plurality of components (col. 2 lines 52-53, database objects in a database) and said database is stored (col. 1 lines 15-18, stored) on a storage volume (col. 1 lines 20-22, physical storage) is suggested.]

“identifying each of said plurality of components using said speculative structure; and” [col. 7 lines 19-22 selectively removing updates back to the user-specified point in time. Accordingly, identifying (selectively removing) each of said plurality of components (updates) using said speculative structure (current snapshot).]

“Selecting a component of said plurality of components;” [col. 2 lines 54-55, discloses obtains a copy of identified one or more source database objects. Accordingly, selecting (obtains a copy of identified) a component of said plurality of components (one or more source database objects) is suggested.]

“generating a point-in-time image of said component” [col. 4 lines 1-2, generate a point-in-time image of the targeted database objects as they exist on the storage device.]

Art Unit: 2167

Murley does not explicitly disclose

“Selecting a data management resource of a plurality of data management resources using an attribute of said component; and”

“Generating a point-n-time image of said component using said data management resource” alone.

On the other hand, Verma, discloses

“selecting a data management resource of a plurality of data management resources using an attribute of said component” [Abstract, each resource manager (data management resources) independently maintains metadata (attribute) associated with a collection of files (component) that are contained within the scope of a resource manager, such as the files within a subdirectory corresponding to the resource manager. [0036], when a file is accessed in a transacted file system, the file system needs to know exactly which resource manager is responsible for maintaining the transactional metadata for that file. Further disclosing, files may be associated in other ways, such as by having the same file extension, having timestamps within a common time frame, by sizes, and may even have tags stored within that identifies a resource manager through some other means. 0009, users can select properties on a per-resource manager basis such as the size of the log file and/or the type of logging to be performed, to obtain different levels of performance, reliability, feature availability, and manageability within a single volume. Accordingly, selecting a data management resource (0036, which resource manager) of a plurality of data management resources (abstract, each resource manager) using attribute of said

Art Unit: 2167

component (0009, users can select properties on a per-resource manager basis, such as the size of the log file) is suggested.].

“Generating a point-n-time image of said component using said data management resource” [[0035], The resource manager typically provides transactional services and functionality, e.g. exposed through APIs. Further disclosing, 0035, the resource manager is thus the unit of management for various resources that do not exist in non-transacted file systems as well as for some resources (e.g. log files) that do. [0011], to facilitate use of a resource manager, application programming interfaces may be provided, including functions to create, start, and shut down a resource manager. Other functions may be defined such as to back up and restore files associated with a resource manager, and employ point-in-time recovery of a particular state in time of a resource manager. Accordingly, generating a point-in-time image (0011, employ point-in-time recover of a particular state in time of a resource manager) of said component (0011, back up and restore files associated with a resource manager) using said data management resource (0011, resource manager) is suggested. ]

Murley, Verma, and Applicant's invention all are directed to recovery systems using point-in-time images of databases. Accordingly, Murley and Verma are within the same field of endeavor. It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have applied the disclosure resource managers of Murley above, to the disclosure of Verma for the purpose of providing different properties to match different needs of various users, databases, and other entities.



**Claim 2:**

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“performing one or more operations to determine if said speculative structure of said database is equivalent to an actual structure of said database” [col. 7 lines 19-22, a consistent copy is created by starting with a current snapshot of the target database (or portions thereof) and selectively removing updates back to the user-specified point-in-time.]

**Claim 3:**

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“Selecting said component of said plurality of components to include within a point-in-time images of said database” [col. 2 lines 60-64, creates a snapshot of the one or more source database objects at a time after the point-in-time and in a manner that does not substantially block access to the source database objects in the database, and makes the snapshot consistent as of the point-in-time.]

**Claim 4:**

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“Selecting at least one of a database directory, a table space container, and a redo log directory.” [col. 4 lines 53-58, if the log entry has not been applied, the update is externalized to the image copy. If the log entry has been applied, the current log entry is skipped and the next log entry is evaluated.]

Art Unit: 2167

**Claim 5:**

The combination of Murley and Verma discloses in Verma the following claimed limitations:

“Selecting said data management resource using said attribute of said component and a user-defined policy.” [0009, users can select properties (user-defined policy) on a per-resource manager basis, such as the size of the log file (attribute of said component).]

**Claim 6:**

The combination of Murley and Verma discloses in Verma the following claimed limitations:

“Selecting said data management resource using at least one of a size attribute, a type attribute, a structure attribute, and a location attribute. “[0009, users can select properties on a per-resource manager basis, such as the size of the log file.]

**Claim 7:**

The combination of Murley and Verma discloses in Verma the following claimed limitations:

“Defining a component size range; and” [0009, users can select properties on a per-resource manager basis, such as the size of the log file]

“Selecting said data management resource in response to a determination that said size attribute is within said component size range.” [0009, users can select properties on a per-resource manager basis, such as the size of the log file]

**Claim 8:**

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“Selecting a point-in-time image creation process” [0011, point-in-time recovery]

**Claim 9:**

Art Unit: 2167

The combination of Murley and Verma discloses in Verma the following claimed limitations:

“wherein said point-in-time image creation process comprises at least one of: a file-level point-in-time image creation process, a directory-level point-in-time image creation process, a file system-level point-in-time image creation process, a storage device-level point-in-time image creation process, a volume-level point-in-time image creation process, and a volume group-level point-in-time image creation process” [0011, back up and restore the files].

**Claim 10:**

The combination of Murley and Verma discloses in Murley discloses the following claimed limitations:

“Selecting at least one of: a snapshot creation process, a storage checkpoint creation process, and a file copy command, and a backup utility process” [col. 2 lines 60, creates a snapshot]

**Claim 11:**

The combination of Murley and Verma discloses in Murley discloses the following claimed limitations:

“Restoring said database using said point-in-time image of said component.” [col. 2 lines 44-51, recover database objects]

**Claim 12:**

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“Said database is initially stored within a first storage region” [col. 5 line 13, original or source database]

“Said restoring comprises,

Restoring said database to a second storage region”[col. 5 lines 17-20, can both generate a copy of a database that is consistent at a specified arbitrary time, or it can recover and replace a database with a consistent point-in-time copy of itself]

**Claim 13:**

Murley discloses the following claimed limitations:

“means for determining a speculative structure of said database;” [col. 7 lines 19-22, current snapshot. Accordingly, determining a speculative structure (current snapshot) of said database (target database) is disclosed.]

“, wherein said database comprises the plurality of components;” [col. 2 lines 52-53, discloses identifies one or more source database objects in a database. Col. 4 line 2 discloses targeted database objects as they exist on the storage device or system. Col. 1 lines 15-18 discloses a database is, fundamentally, a computerized record keeping system in which large amounts of information maybe stored in a structured manner for ease of subsequent retrieval and processing. Col. 1 lines 20-22, discloses a dbms, in turn provides four primary functions: management of physical storage. Accordingly, wherein said database (col. 2 lines 52-53, a database) comprises the plurality of components (col. 2 lines 52-53, database objects in a database) is suggested.]

“means for identifying each of said plurality of components using said speculative structure; and” [col. 7 lines 19-22 selectively removing updates back to the user-specified point in time. Accordingly, identifying (selectively removing) each of said plurality of components (updates) using said speculative structure (current snapshot).]

"and storage means for storing said database"[col. 1 lines 15-18 and col. 1 lines 20-22]

However, Murley does not explicitly disclose

“means for associating a data management resource with a component of said plurality of components; and”

“means for generating a point-in-time image of said component using said data management resource”

On the other hand, Verma, discloses

“Means for associating a data management resource with a component of said plurality of components; and” [Abstract, each resource manager (data management resources) independently maintains metadata associated (associated) with a collection of files (component) that are contained within the scope of a resource manager, such as the files within a subdirectory corresponding to the resource manager. [0036], when a file is accessed in a transacted file system, the file system needs to know exactly which resource manager is responsible for maintaining the transactional metadata for that file. Further disclosing, files may be associated in other ways, such as by having the same file extension, having timestamps within a common time frame, by sizes, and may even have tags stored within that identifies a resource manager through some other means. 0009, users can select properties on a per-resource manager basis such as the size of the log file and/or the type of logging to be performed, to obtain different levels of performance, reliability, feature availability, and manageability within a single volume.

Accordingly, means for associating a data management resource with a component of said

Art Unit: 2167

plurality of components (0009, users can select properties on a per-resource manager basis, such as the size of the log file) is suggested.].

“means for generating a point-n-time image of said component using said data management resource” [[0035], The resource manager typically provides transactional services and functionality, e.g. exposed through APIs. Further disclosing, 0035, the resource manager is thus the unit of management for various resources that do not exist in non-transacted file systems as well as for some resources (e.g. log files) that do. [0011], to facilitate use of a resource manager, application programming interfaces may be provided, including functions to create, start, and shut down a resource manager. Other functions may be defined such as to back up and restore files associated with a resource manager, and employ point-in-time recovery of a particular state in time of a resource manager. Accordingly, means for generating a point-in-time image (0011, employ point-in-time recover of a particular state in time of a resource manager) of said component (0011, back up and restore files associated with a resource manager) using said data management resource (0011, resource manager) is suggested. ]

Murley, Verma, and Applicant's invention all are directed to recovery systems using point-in-time images of databases. Accordingly, Murley and Verma are within the same field of endeavor. It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have applied the disclosure resource managers of Murley above, to the disclosure of Verma for the purpose of providing different properties to match different needs of various users, databases, and other entities.

**Claim 14:**

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“performing one or more operations to determine if said speculative structure of said database is equivalent to an actual structure of said database” [col. 7 lines 19-22, a consistent copy is created by starting with a current snapshot of the target database (or portions thereof) and selectively removing updates back to the user-specified point-in-time.]

**Claim 15:**

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“Means for associating a point-in-time image creation process with said component of said plurality of components” [figure 1, element 110, snapshot designated objects].

**Claim 16:**

The combination of Murley and Verma discloses in Verma the following claimed limitations:

“Means for associating said data management resource with said component of said plurality of components using an attribute of said component” [Abstract, each resource manager (data management resources) independently maintains metadata (attribute of said component) associated (associated) with a collection of files (component) that are contained within the scope

Art Unit: 2167

of a resource manager, such as the files within a subdirectory corresponding to the resource manager.]

**Claim 17:**

The combination of Murley and Verma discloses in Verma the following claimed limitations:

“Means for associating said data management resource with said component of said plurality of components using a user-defined policy” [0009, users can select properties (user-defined policy) on a per-resource manager (data management resource) basis, such as the size of (attribute of) the log file (said components of said plurality of components).]

**Claim 18:**

The combination of Murley and Verma discloses in Verma the following claimed limitations:

“Means for associating said data management resource with said component of said plurality of components using at least one of a size attribute, a type attribute, a structure attribute, and a location attribute” [0009, users can select properties on a per-resource manager basis, such as the size of the log file]

**Claim 19:**

The combination of Murley and Verma discloses in Verma the following claimed limitations:

“Means for defining a component size range; and” [0009, users can select properties on a per-resource manager basis, such as the size of the log file]



Art Unit: 2167

“Means for associating said data management resource with said component in response to a determination that said size attribute is within said component size range” [0009, users can select properties on a per-resource manager basis, such as the size of the log file]

**Claim 20:**

The combination of Murley and Verma discloses in Verma the following claimed limitations:

“Means for generating a point-in-time image of said database” [col. 2 lines 46-48].

**Claim 21:**

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“Means for restoring said database using said point-in-time image of said component”  
[col. 2 lines 44-51, recover database objects]

**Claim 22:**

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“Said database is initially stored within a first storage region, and” [col. 5 line 13, original or source database]

“Said means for restoring comprises,

Means for restoring said database to a second storage region” [col. 5 lines 17-20, can both generate a copy of a database that is consistent at a specified arbitrary time, or it can recover and replace a database with a consistent point-in-time copy of itself].

**Claim 23:**

Murley discloses the following claimed limitations:

“A machine-readable storage medium having a plurality of instructions executable by a machine embodied therein, wherein said plurality of instructions when executed cause said machine to:

determining a speculative structure of said database;” [col. 7 lines 19-22, current snapshot. Accordingly, determining a speculative structure (current snapshot) of said database (target database) is disclosed.]

“, wherein said database comprises the plurality of components and said database is stored on a storage volume;” [col. 2 lines 52-53 discloses identifies one or more source database objects in a database. Col. 4 line 2 discloses targeted database objects as they exist on the storage device or system. Col. 1 lines 15-18 discloses a database is, fundamentally, a computerized record keeping system in which large amounts of information maybe stored in a structured manner for ease of subsequent retrieval and processing. Col. 1 lines 20-22, discloses a dbms, in turn provides four primary functions: management of physical storage. Accordingly, wherein said database (col. 2 lines 52-53, a database) comprises the plurality of components (col. 2 lines 52-53, database objects in a database) and said database is stored (col. 1 lines 15-18, stored) on a storage volume (col. 1 lines 20-22, physical storage) is suggested.]

“identifying each of said plurality of components using said speculative structure; and” [col. 7 lines 19-22 selectively removing updates back to the user-specified point in time. Accordingly, identifying (selectively removing) each of said plurality of components (updates) using said speculative structure (current snapshot).]

“Select a component of said plurality of components;” [col. 2 lines 54-55, discloses obtains a copy of identified one or more source database objects. Accordingly, selecting (obtains

Art Unit: 2167

a copy of identified) a component of said plurality of components (one or more source database objects) is suggested.]

“generating a point-in-time image of said component” [col. 4 lines 1-2, generate a point-in-time image of the targeted database objects as they exist on the storage device.]

Murley does not explicitly disclose

“Select a data management resource of a plurality of data management resources using an attribute of said component; and”

“Generate a point-n-time image of said component using said data management resource” alone.

On the other hand, Verma, discloses

“select a data management resource of a plurality of data management resources using an attribute of said component” [Abstract, each resource manager (data management resources) independently maintains metadata (attribute) associated with a collection of files (component) that are contained within the scope of a resource manager, such as the files within a subdirectory corresponding to the resource manager. [0036], when a file is accessed in a transacted file system, the file system needs to know exactly which resource manager is responsible for maintaining the transactional metadata for that file. Further disclosing, files may be associated in other ways, such as by having the same file extension, having timestamps within a common time

Art Unit: 2167

frame, by sizes, and may even have tags stored within that identifies a resource manager through some other means. 0009, users can select properties on a per-resource manager basis such as the size of the log file and/or the type of logging to be performed, to obtain different levels of performance, reliability, feature availability, and manageability within a single volume.

Accordingly, selecting a data management resource (0036, which resource manager) of a plurality of data management resources (abstract, each resource manager) using attribute of said component (0009, users can select properties on a per-resource manager basis, such as the size of the log file) is suggested.].

“Generate a point-n-time image of said component using said data management resource”  
[[0035], The resource manager typically provides transactional services and functionality, e.g. exposed through APIs. Further disclosing, 0035, the resource manager is thus the unit of management for various resources that do not exist in non-transacted file systems as well as for some resources (e.g. log files) that do. [0011], to facilitate use of a resource manager, application programming interfaces may be provided, including functions to create, start, and shut down a resource manager. Other functions may be defined such as to back up and restore files associated with a resource manager, and employ point-in-time recovery of a particular state in time of a resource manager. Accordingly, generating a point-in-time image (0011, employ point-in-time recover of a particular state in time of a resource manager) of said component (0011, back up and restore files associated with a resource manager) using said data management resource (0011, resource manager) is suggested. ]

Art Unit: 2167

Murley, Verma, and Applicant's invention all are directed to recovery systems using point-in-time images of databases. Accordingly, Murley and Verma are within the same field of endeavor. It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have applied the disclosure resource managers of Murley above, to the disclosure of Verma for the purpose of providing different properties to match different needs of various users, databases, and other entities.

**Claim 24:**

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“performing one or more operations to determine if said speculative structure of said database is equivalent to an actual structure of said database” [col. 7 lines 19-22, a consistent copy is created by starting with a current snapshot of the target database (or portions thereof) and selectively removing updates back to the user-specified point-in-time.]

**Claim 25:**

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“Selecting said component of said plurality of components to include within a point-in-time images of said database” [col. 2 lines 60-64, creates a snapshot of the one or more source database objects at a time after the point-in-time and in a manner that does not substantially

Art Unit: 2167

block access to the source database objects in the database, and makes the snapshot consistent as of the point-in-time.]

**Claim 26:**

The combination of Murley and Verma discloses in Verma the following claimed limitations:

“Selecting said data management resource using said attribute of said component and a user-defined policy.” [0009, users can select properties (user-defined policy) on a per-resource manager basis, such as the size of the log file (attribute of said component).]

**Claim 27:**

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“Selecting a point-in-time image creation process” [0011, point-in-time recovery]

**Claim 28:**

Murley discloses the following claimed limitations:

“A first computer-readable storage medium to store a database; and” [original or source database]

“A point-in-time image utility configured to,

Access said first storage element;” [col. 2 lines 51-52, identifies one or more source database objects]

“determining a speculative structure of said database;” [col. 7 lines 19-22, current snapshot. Accordingly, determining a speculative structure (current snapshot) of said database (target database) is disclosed]

“, wherein said database comprises the plurality of components;” [col. 2 lines 52-53 discloses identifies one or more source database objects in a database. Col. 4 line 2 discloses targeted database objects as they exist on the storage device or system. Col. 1 lines 15-18 discloses a database is, fundamentally, a computerized record keeping system in which large amounts of information maybe stored in a structured manner for ease of subsequent retrieval and processing. Col. 1 lines 20-22, discloses a dbms, in turn provides four primary functions: management of physical storage. Accordingly, wherein said database (col. 2 lines 52-53, a database) comprises the plurality of components (col. 2 lines 52-53, database objects in a database) is suggested.]

“identify each of said plurality of components using said structure; and” [col. 7 lines 19-22 selectively removing updates back to the user-specified point in time. Accordingly, identifying (selectively removing) each of said plurality of components (updates) using said speculative structure (current snapshot)]

“Select a component of said plurality of components;” [col. 2 lines 54-55, discloses obtains a copy of identified one or more source database objects. Accordingly, selecting (obtains a copy of identified) a component of said plurality of components (one or more source database objects) is suggested.]

“generating a point-in-time image of said component” [col. 4 lines 1-2, generate a point-in-time image of the targeted database objects as they exist on the storage device.]

Murley does not explicitly disclose

“Select a data management resource of a plurality of data management resources using an attribute of said component; and”

“Generate a point-n-time image of said component using said data management resource” alone.

On the other hand, Verma, discloses

“select a data management resource of a plurality of data management resources using an attribute of said component” [Abstract, each resource manager (data management resources) independently maintains metadata (attribute) associated with a collection of files (component) that are contained within the scope of a resource manager, such as the files within a subdirectory corresponding to the resource manager. [0036], when a file is accessed in a transacted file system, the file system needs to know exactly which resource manager is responsible for maintaining the transactional metadata for that file. Further disclosing, files may be associated in other ways, such as by having the same file extension, having timestamps within a common time frame, by sizes, and may even have tags stored within that identifies a resource manager through some other means. 0009, users can select properties on a per-resource manager basis such as the size of the log file and/or the type of logging to be performed, to obtain different levels of performance, reliability, feature availability, and manageability within a single volume. Accordingly, selecting a data management resource (0036, which resource manager) of a plurality of data management resources (abstract, each resource manager) using attribute of said



Art Unit: 2167

component (0009, users can select properties on a per-resource manager basis, such as the size of the log file) is suggested.].

“Generate a point-n-time image of said component using said data management resource”

[[0035], The resource manager typically provides transactional services and functionality, e.g. exposed through APIs. Further disclosing, 0035, the resource manager is thus the unit of management for various resources that do not exist in non-transacted file systems as well as for some resources (e.g. log files) that do. [0011], to facilitate use of a resource manager, application programming interfaces may be provided, including functions to create, start, and shut down a resource manager. Other functions may be defined such as to back up and restore files associated with a resource manager, and employ point-in-time recovery of a particular state in time of a resource manager. Accordingly, generating a point-in-time image (0011, employ point-in-time recover of a particular state in time of a resource manager) of said component (0011, back up and restore files associated with a resource manager) using said data management resource (0011, resource manager) is suggested. ]

Murley, Verma, and Applicant's invention all are directed to recovery systems using point-in-time images of databases. Accordingly, Murley and Verma are within the same field of endeavor. It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have applied the disclosure resource managers of Murley above, to the disclosure of Verma for the purpose of providing different properties to match different needs of various users, databases, and other entities.

**Claim 29:**

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“A memory to execute said point-in-time image utility; and” [col. 7 lines 50-55, memory]

“A processor coupled to said memory to execute said point-in-time image utility.” [col. 7 lines 55-58, processor]

**Claim 30:**

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“wherein said first node comprises said first storage element and said point-in-time image utility.” [col. 5 line 13, original or source database]

**Claim 31:**

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“a second node communicatively coupled to said first node, wherein said second node comprises a second storage element to store said point-in-time image of said component.” [col. 5 lines 17-20, can both generate a copy of a database that is consistent at a specified arbitrary time, or it can recover and replace a database with a consistent point-in-time copy of itself]

**Claim 32:**

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“perform one or more operations to determine if said speculative structure of said database is equivalent to an actual structure of said database” [col. 7 lines 19-22, a consistent copy is created by starting with a current snapshot of the target database (or portions thereof) and selectively removing updates back to the user-specified point-in-time.]

**Claim 33 :**

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“selecting one of a plurality of pre-defined database structures.”[ col. 7 lines 19-22, current snapshot.]

**Claim 34 :**

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“means for selecting one of a plurality of predefined database structures.”[ col. 7 lines 19-22, current snapshot.]

**Claim 35 :**

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“select one of a plurality of predefined database structures”[ col. 7 lines 19-22, current snapshot.]

**Claim 36 :**

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“select one of a plurality of pre-determined database structures”[ col. 7 lines 19-22, current snapshot.]

***Response to Arguments***

8. Applicant's arguments filed 1/25/08 have been fully considered but they are not persuasive.

Applicant's assert the following (lettered):

A. Applicant's assert that the combination of Murley and Verma do not disclose the limitations of claims 1, 14, 24, and 28 because neither Murley and Verma disclose "a speculative structure". Asserting that A current snapshot of the target database is a real, current state of the target database. A consistent copy is a copy where all the data is consistent across a transaction, which is not a speculative structure since the consistent copy represents a known state of the target database at one time. Further stating that Murley and Verma do not even address the use of a "speculative structure" of a database (since no speculative structure is disclosed in the combination of Murley and Verma) for the identification of components, as recited in the independent claims. That therefore, "determining a speculative structure of a database" and "identifying each of said plurality of components using said speculative structure of said database" is not disclosed.

*In response, the examiner respectfully disagrees that a speculative structure is not disclosed. As stated in the rejection, a speculative structure of said database is construed to be a current snapshot, col. 7 lines 19-22. That by selectively removing updates back to the user-*

Art Unit: 2167

*specified point-in-time as disclosed in col. 7 lines 19-22, identifying each of said plurality of components using said speculative structure.*

*Accordingly, determining a speculative structure (current snapshot) of said database (target database) is disclosed. And identifying (selectively removing) each of said plurality of components (updates) using said speculative structure (current snapshot).*

*Simply put, the consistent copy of Murley is created by a snapshot (speculative structure) and that after modifications are made using the snapshot, the consistent copy is created.*

*Lastly, the term a speculative structure is non-functional descriptive language, that does not appear to provide any concrete instruction. Rather it's mere data. Furthermore, "using a speculative structure", does not indicate how the speculative structure is being used.*

*Accordingly, the claimed limitations are still broad enough to be disclosed by the cited references. Therefore, the rejection is maintained.*

***Conclusion***

9. The prior art made of record listed on PTO-892 and not relied, if any, upon is considered pertinent to applicant's disclosure.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Contact Information***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael D. Pham whose telephone number is (571)272-3924. The examiner can normally be reached on Monday - Friday 9am - 5:00pm.

Art Unit: 2167

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Cottingham can be reached on 571-272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/M. P./  
Examiner, Art Unit 2167

/John R. Cottingham/  
Supervisory Patent Examiner, Art Unit  
2167